



(S) Norway Gets FORNSAT Collection Capability On Par With NSA's

FROM: [REDACTED]
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(S) On December 15th, 2005, General Hagen, Director Norwegian Intelligence Service (NIS), accepted and dedared Initial Operating Capability (IOC) of VICTORYGARDEN and the associated FORNSAT collection and processing capabilities. IOC marks the successful completion of a \$33 million dollar NIS-funded effort under the accommodation-buy program. NIS now has a national FORNSAT collection capability comparable to an NSA FORNSAT site.

[REDACTED]

*(S//SI) MG Hagen, Director NIS, accepting delivery of VICTORYGARDEN from [REDACTED],
Chief of DP3 (standing at left)*

(S) Four years ago, NIS approached NSA about using the accommodation-buy process to obtain a FORNSAT SIGINT capability. Two years ago, on behalf of NIS, FAD's Technical Services Group entered into contract for three 18-meter and one 13-meter COMSAT receive-only antennas, associated RF and IF switching and front-end equipment. Capabilities include:

- Three 18-meter C/KU band antennas providing concurrent dual polarity feeds for each band with redundant RF electronics.
- One 13-meter with similar capabilities and integration of two existing 13m C/L band antennas already installed for INMARSAT collection.
- All RF is downconverted to L-band at the antenna.
- Fiber Optic connectivity between all antennas and the site. Additional fiber optic connectivity to existing antennas at the nearby Norwegian NATO communication provides additional satellite coverage.
- 48/64 non-blocking RF switch expandable in 16 input/output segments
- 128/128 non-blocking IF switch
- L-band downconverters, modern satellite modems and DVBS wideband modems
- Integrated M&C system permitting control of the entire site from single desktop at site or NIS headquarters

[REDACTED]

(S//SI) Two of Norway's new 18-meter COMSAT antennas

(S) The SIGINT processing portion of the system was system engineered by FAD with support from [CES](#), [RFO](#) and other NSA offices. Taking advantage of being able to design the system from a clean sheet of paper, the engineering team was able to use the latest technology and capabilities available. By multiplexing E1 and/or E3 outputs from the VICTORYGARDEN modems into an STM-1, VICTORYGARDEN takes advantage of selection capabilities developed by NSA Special Source Operations ([SSO](#)). Circuit-switched communications are then processed by FENESTRA while packet and C2C communications are processed by WEALTHYCLUSTER. VSAT communications processed by FALLOWHAUNT target Hughes TES, Hughes PES and Skylinx DDS. Follow-on processing systems process and forward FAX and Voice communications to NUCLEON at NIS Headquarters for analysis. OCTAVE manages tasking for appropriate systems and CADENCE manages dictionaries in BLACKNIGHTs.

(S) The "technical" piece of the system is only part of a successful program. Operational success shows a system's true value. Early in the program, the joint NSA and NIS program management team realized that NIS's limited FORNSAT operational experience needed to be addressed. The Office of Russia, RFO FORNSAT Division, and others experienced in the analysis of FORNSAT signals, provided briefings and overview training related to SS7 communications, call chaining, satellite databasing (ROADBED) and dictionary management in early 2005.

(S) The Yakima Research Station (YRS) hosted a visit in January 2005. In March 2005, YRS personnel flew to Norway to meet with site personnel to discuss signal analysis in a COMSAT environment. The result was YRS recommending an extensive signal analysis position. In November 2005, YRS returned to Norway to train NIS signal analysts on a dedicated signal analysis position that included nearly all software tools used at YRS. NIS has stated that this training conducted in a live signal environment was invaluable. NIS and NSA have agreed to have NIS and YRS analysts continue collaboration with future visits to both sites.

(S) In closing, VICTORYGARDEN provides the Norwegian Intelligence Service a state-of-the-art FORNSAT site. VICTORYGARDEN includes capabilities previously not released outside of NSA. A partnership between the new NIS FORNSAT site and the Yakima Research Station and the NSA FORNSAT organization exists to help ensure that VICTORYGARDEN is operationally successful. NSA/FAD is very encouraged that the prospects for success are very bright, and we are firmly convinced that we have only begun to see future possibilities to benefit both our nations and the free world.

(S//SI) *New Norwegian FORNSAT site (VICTORYGARDEN)*

(U//FOUO) This article is reprinted from the *Foreign Affairs Digest*, January edition (originally titled "VICTORYGARDEN IOC"). For background on VICTORYGARDEN, see an [earlier article](#).

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